DOCUMENT RESUME

ED 244 086 CE 038 913

TITLE Assessing Training Requirements for High Demand Occupations Suitable for Job Corps. Job Corps Vocational Education Offerings Review. Documentation Report No. 3.
INSTITUTION Manpower Administration (DOL), Washington, D.C. Job Corps.
PUB DATE Sep 83
NOTE 91p.; For related documents, see CE 038 911-917.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Curriculum Development; *Demand Occupations; *Economically Disadvantaged; Educational Assessment; *Educational Needs; *Job Training; National Programs; Needs Assessment; Postsecondary Education; Program Effectiveness; *Required Courses; Secondary Education; *Vocational Education; Youth Programs
IDENTIFIERS *Job Corps

ABSTRACT

As part of a multiphase study of Job Corps vocational education offerings and outcomes during fiscal year 1982, a study examined Job Corps efforts and procedures for identifying high growth occupations. Using input from the U.S. Bureau of Labor Statistics, researchers identified high growth occupations for which the Job Corps is either currently not providing training or is providing training to fewer than 25 corpsmembers. Based on their study, the researchers recommended that the Job Corps provide additional training for the following occupations: word processing machine operators; data entry operators; billing machine operators, proof machine operators, and payroll clerks; business machine repairers; production painters; emergency medical, surgical, and X-ray technicians; computer operators; and computer service technicians. (Included in this guide are training consideration sheets for each of these occupations, consisting of discussions of job duties, employer hiring requirements and preferences, training information, and job outlook.) (MN)

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JOB CORPS

VOCATIONAL EDUCATION OFFERINGS REVIEW

Documentation Report No. 3

Assessing Training Requirements for High Demand Occupations Suitable for Job Corps

September 1983

U.S. DEPARTMENT OF EDUCATION
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Documentation Report No. 3

Assessing Training Requirements
for High Demand Occupations
Suitable for Job Corps

Table of Contents

		Page
I.	Introduction	2
II.	Methodology	2
III.	Occupations Recommended for Further Consideration as Job Corps Training Offerings	8
	Word Processing Machine Operator	10
	Data Entry Operator	13
	Billing Machine Operator, Proof Machine Operator, and Payroll Clerk	16
	Business Machine Repairer	20
	Production Painter	24
	Emergency Medical Technician	26
	Surgical Technician	29
	X-Ray Technician	32
	Computer Operator	38
	Computer Service Technician	42
IV.	Occupations Which Could Not Be Recommended Due to Inadequate Data	51

Test Tables

Table A	Occupations Recommended for Further Consideration As Job Corps Training Offerings	5

Attached Table

Table III-A	OES and Related D.O.T. Titles in Which Job Corps is Currently Not Training or in Which Job Corps is Providing Training to Fewer Than 25 Individuals	

Documentation Report No. 3

Assessing Training Requirements For High Demand Occupations Suitable For Job Corps

I. Introduction

This report identifies high growth occupations in which, according to the Job Corps Management Information System, Job Corps is either currently not providing training, or is providing training to fewer than twenty-five corpsmembers. It also provides an assessment of the training requirements of those occupations that appear to be feasible for Job Corps training in the future.

II. Methodology

The following steps were taken to identify occupations that were projected to grow faster than the average during the 1980's. The first step was to select criteria that could be used to identify those occupations suitable for Job Corps training.

A panel from the U.S. Bureau of Labor Statistics was asked to select specific criteria that could be used to identify high growth occupations suitable for Job Corps training. The panel considered projected absolute growth, projected percentage growth, and the labor market information in the Occupational Outlook Handbook as valid and useful criteria for the task of selecting new occupations. Recent unemployment rates and wage and salary information were considered important but less critical for the entry level positions that Job Corps trainees will occupy. Another important source of information chosen by the panel was projected job openings and replacement needs from

the Occupational Projections and Training Data 1982 supplement to the 1982-83 Occupational Outlook Handbook. However, since that publication provided information on only about 30 occupational areas relevant to the Job Corps population, it was determined not to be appropriate for this task.

Second, a list of possible occupations was developed. These occupations were selected from the list of occupational titles in Documentation Report No. 2, Table II-B-2, using the following criteria:

1. Job Corps is either currently not training in the occupation or is providing training to fewer than 25 corpsmembers.
2. The occupation is projected to experience an absolute increase in employment of 10,000 or more between 1980 and 1990.
3. The occupation requires a language level of twelfth grade or less.
4. The occupation requires two years of training or less.

The list in Table II-B-2 in Documentation Report No. 2 screened out OES titles which had no D.O.T. titles meeting the criteria in items 3 and 4 listed above.

The attached Table III-A provides a list of the sixty-one occupations which meet the criteria plus the following specific information about each occupation: (1) Occupational Employment Survey (OES) number, (2) OES job title and related Dictionary of Occupational Title (D.O.T.), (3) D.O.T. code, (4) projected absolute employment change, (5) projected percent employment change, (6) language (grade) level required, (7) a code representing length of

training required, and (8) a code representing suitability of the occupation for Job Corps training. (The keys to the codes for columns 7 and 8 are listed at the end of the table.)

Third, each possible occupation was evaluated using the following criteria:

1. Absolute change in the number of persons employed in the occupation is projected to increase 10,000 or more by 1990.

2. Percent growth, projected from 1980 to 1990, is projected to be at least 18.5% (the average national percentage growth for all occupations).

3. The occupation requires an educational level of high school or less.

4. The occupation requires a training time of two years or less.

5. Employer hiring practices, including age requirements and preferred education and training levels, are commensurate with corpsmember experience.

6. The occupation was recommended by a panel of Job Corps employees who have knowledge of corpsmembers and of current Job Corps vocational training programs.

Occupations meeting at least five of the criteria were selected for further consideration as new Job Corps training offerings. The list of these twelve occupations appears in Table A.

An occupational fact sheet was developed for each occupation selected for further consideration. It includes information on: (1) job duties, (2) employer hiring requirements and preferences, (3) training information, (4) job outlook, (5) salary, and (6) selected training competencies.

TABLE A

OCCUPATIONS RECOMMENDED FOR FURTHER
CONSIDERATION AS JOB CORPS TRAINING OFFERINGS

A. CLERICAL AND SALES CLUSTER

1. Word Processing Machine Operator

203.362.022 Word Processing Machine Operator

2. Data Entry Operator

203.582.026 Data Entry Operator

3. Bookkeeping

a. Billing Machine Operator

210.382.022 Machine Operator 1
210.382.026 Machine Operator 2
214.482.010 Billing Machine Operator

Increase = 35,128 Percentage = 19.9%

b. Payroll Clerk

215.382.010 Payroll Clerk, Data Processing
215.482.010 Payroll Clerk

Increase = 35,129 Percentage = 18.1

c. Proof Machine Operator

217.382.010 Proof Machine Operator

Increase = 12,304 Percentage = 25.9%

B. OFFICE MACHINE REPAIR

1. Office Machine Repair

633.281.018 Office Machine Servicer, Apprentice
706.381.030 Typewriter Repairer

Increase = 31,988 Percentage = 62.4%

C. INDUSTRIAL PRODUCTION

1. Production Painter

Increase = 23,654 Percentage = 21.8%

D. HEALTH OCCUPATIONS

1. Emergency Medical Technicians

079.374.010 Emergency Medical Technician

Increase = 22,000 Percentage = 18.5%

2. Surgical Technician

079.394.022 Surgical Technician

Increase = 12,340 Percentage = 39.4%

3. X-Ray Technician

078.362.026 Radiologic Technologist

Increase = 33,909 Percentage = 37.2%

E. POTENTIAL HIGH TECHNOLOGY ADDITIONS TO JOB CORPS

1. Computer Operator and Peripheral EDP Equipment Operator

213.362.010 Computer Operator

Increase = 132,170 Percentage = 71.7%

213.382.010 Computer, Peripheral Equipment Operator

Increase = 77,296 Percentage = 44.1%

2. Data Processing Machine Mechanic (Computer Service Technicians)

828.281.010 Electronics Mechanic
828.281.014 Electronics Mechanic/Apprentice

Increase = 77,296 Percentage = 93.4%

The information contained in categories 1 through 5 was obtained from the 1980-81 and 1982-83 editions of the Bureau of Labor Statistics', Occupational Outlook Handbook. Category 6 was extracted from occupational catalogs developed by the Vocational-Technical Education Consortum of States (V-TECS) or from industry guidelines.

V-TECS, is a cooperative effort among eleven states and three associate agencies to develop worker-validated catalogs of performance objectives and performance guides in selected areas of occupational education. Member states include Alabama, Florida, Georgia, Illinois, Kentucky, Maryland, Michigan, Pennsylvania, South Carolina, Virginia, and West Virginia. The Community College of the Air Force, the Training and Doctrine Command, and the U.S. Naval Education and Training command have associate membership with the Consortium.

Member states of V-TECS conserve money and time and avoid unnecessary duplication of efforts by combining resources and working together for mutual benefit. Uniform procedures and guidelines are used to insure confidence and promote transportability of products among states. The basic procedures followed in catalog development consist of:

1. Conducting state-of-the-art study.
2. Developing occupational inventory (writing team involvement).
3. Identifying the population.
4. Conducting occupational survey.
5. Analyzing survey data.

6. Converting task statements into performance objectives and performance guides (writing team involvement).

7. Conducting review of catalog.

8. Developing final catalog (writing team involvement).

The development of catalogs of performance objectives and performance guides through a consortium framework is a unique effort to share services, technology, and resources. Well-trained students who will be the work force of tomorrow are the ultimate goal of this Consortium endeavor.

III. Occupations Recommended for Further Consideration as Job Corps Training Offerings

The occupations listed in Table A are recommended for further consideration as Job Corps training offerings. The list is not large because Job Corps is already providing training in most of the high growth areas which suit corpsmember ability levels.

In light of the training requirements and of on-going Job Corps training, it is suggested that the occupations of Office Machine Repair, Production Painter, Computer/Peripheral EDP Equipment Operator and Computer Service Technician should be taught as discrete courses. Billing Machine Operator, Proof Machine Operator and Payroll Clerk could be added to existing bookkeeping programs and word processing and data entry training could be taught as an extension of the other clerical programs.

Specific recommendations for possible methods of implementing these occupations in the Job Corps setting are contained in Documentation Report No. 6. Several of the programs will require contracting training to other institutions. Others programs may

be conducted on center. In all cases, center personnel must determine the feasibility of conducting a new training program at their particular site. To determine feasibility, the following questions should be answered:

1. What employment opportunties currently exist in the area?
2. Wnat are the employment projections for the next five years?
3. Will the training program qualify workers for these employment opportunities?
4. What reading, language and math prerequisite skills are required for training?
5. How many corpsmembers qualify for the program (meet skill requirements, show aptitude for the occupation, and are interested in training for the occupation)?
6. How many corpsmembers would be projected to participate in the program in subsequent years?
7. Can a qualified instructor be obtained for the program?
8. What competencies are to be taught in the program?
9. Can necessary equipment be obtained?
10. Can classroom space be obtained?
11. Can on-the-job experience be easily obtained?
12. Will the program meet state licensing requirements?
13. Will the program prepare corpsmembers for employment in other localities?
14. What is the anticipated program cost?
15. What is the anticipated program placements?
16. Will placements justify the cost?

The fact sheets for each occupation appear in the following pages.

TRAINING CONSIDERATION: Word Processing Machine Operator

DOT: 203.362.022

JOB DUTIES:

Word processing machine operators utilize clerical skills to use word processing equipment to record, edit, store and revise correspondence, reports, statistical tables, forms and other materials. They read instructions to determine procedures to be followed regarding material to be prepared or revised and required format for finished copy. They depress keys on word processing equipment to adjust controls for spacing margins and tabulation, and place tape cassette, diskette or other magnetic recording medium in holder. They also keyboard (type) original material into machine memory, typing from printed copy, machine dictation or related sources. Word processors read proof copy of material entered into machine memory and depress keys to correct typographical errors, print out final copy and record material onto magnetic medium. They locate medium in file when revisions are required, place medium in holder and press keys to insert (type), delete, correct, reposition or reformat designated material. They may operate equipment that extends word processing capabilities, such as cathode ray tube displays (CRT's), single or multiple printers or optical character recognition (OCR) equipment. Important variations in the occupation are the kinds (trade names) of word processing equipment operated.

EMPLOYER HIRING REQUIREMENTS AND PREFERENCES:

Many employers prefer clerical applicants with word processing experience; some require it. In addition, most employers require a typing speed of at least 45-55 words per minute. Good spelling, punctuation and grammar are also important skills for word processing machine operators.

TRAINING INFORMATION:

Word processing is currently taught in virtually all secretarial schools and vocational schools offering clerical training. Word processing systems do differ, but an individual who has experience with one system can usually adapt to a new one.

SALARY:

According to a 1980 American Management Association survey, a senior word processor's average salary was $11,596 per year.

JOB OUTLOOK:

Very good job prospects are expected during the coming years for typists who can use word processors. Just as the electric typewriter superseded the manual typewriters, word processors are now becoming standard office equipment.

COMPETENCIES:

Transcribe information from recorded media
Set up work station
Insert diskettes
Create files
Prepare document format for file
Keyboard reports
Keyboard correspondence
Keyboard addresses into master mailing list
Copy files
Merge files

Insert material into file
Delete material from file
Replace material in file
Correct malfunctioning program
Correct errors (edit file)
Locate information on diskette
Print document
Print addresses onto mailing media
Change print wheel
File diskette

TRAINING CONSIDERATION: Data Entry

DOT: 203.582.026 Data Entry (Data Coder Operator)

JOB DUTIES:

Data entry personnel operate machines with keyboards to transcribe data onto magnetic tape or disks for computer input. They examine codes on forms and source documents to determine work procedures. Data entry operators set switches and press keys which generate impulses onto tape or disks to record data from forms and documents. The operators observe the machine to note error indications and press keys to make corrections, remove the disk and route with source documents for computer processing.

EMPLOYER HIRING REQUIREMENTS AND PREFERENCES:

Employers in private industry usually require a high school education. Data entry personnel are often tested for their ability to work quickly and accurately. Data entry operators should be able to work under supervision and as part of a team. They must feel comfortable working with machines and doing repetitive, organized tasks.

TRAINING INFORMATION:

Data entry courses are currently being offered in vocational schools with clerical training. These programs usually last from three months to one year and include training in keyboarding, typewriting, recordkeeping/filing, business math and data entry labs. Since corpsmembers are also enrolled in basic education, a Job Corps data entry program would last approximately two to three months longer.

SALARY:

According to 1980 Occupational Outlook Handbook data the earnings of data entry operator trainees employed in private industry averaged about $200 a week. Those with experience earn slightly more.

JOB OUTLOOK:

Changes in data processing technology will have differing effects on computer operating occupations. The Bureau of Labor Statistics' national projections indicate that keypunch operators will experience a decline of 31,000 between 1980 and 1990. Data entry D.O.T. codes, as well as keypunch operators codes were included under the OES Keypunch Operator heading in the national projections. However, BLS personnel indicated that the data entry codes were experiencing growth and that the great decline of keypunch operators placed the entire group of D.O.T. codes in a negative position.

COMPETENCIES:

Performing Data Control Functions

- Prepare documents and batch tickets for data entry
- Receive data from remote unit
- Copy data
- Check out tapes or disks from library
- Prepare keyed job documents for return to supervisor
- Recover data after incorrectly removing tape or diskette
- Recover data after power failure
- Perform emergency shutdown procedures

Entering and Verifying Data

- Set up work station
- Prepare key entry program for off-line data entry device
- Enter data from source documents (with or without program control)
- Enter data from optical character recognition (OCR)

Add new records
Modify records
Correct data entry errors
Search tape, disk, or diskette for information
Transmit data
Terminate operation
Verify and correct data

TRAINING CONSIDERATION: Expand Bookkeeping to include Bookkeeping Machine Operators, Billing Machine Operators, Proof Machine Operators, Payroll Clerks, and Payroll Clerks, Data Processing

DOT:		
	210.382.022	Machine Operator 1
	210.382.026	Machine Operator 2
	214.482.010	Billing Machine Operator
	217.382.010	Proof Machine Operator
	215.382.010	Payroll Clerk, Data Processing
	215.482.010	Payroll Clerk

JOB DUTIES

Bookkeeping clerks and machine operators prepare records of the financial transactions of an establishment. Bank clerks have duties unique to the banking industry. They may specialize in a particular job in large banks, while in a small bank they may perform several jobs. Many bank clerks operate office machines unique to banking.

Bookkeeping machine operators run electronic posting machines to record financial transactions. In many cases, these individuals now enter data directly onto computer terminals. Proof machine operators use equipment that sorts check and deposit slips, adds the amounts, and records the tabulations. Proof machine operators may also use electronic check sorting equipment, such as magnetic ink character readers.

Payroll clerks compute wages and post wage data to payroll records using either computers or calculators and posting machines. They also record and verify information upon which wages are paid and then prepare payroll checks.

EMPLOYER HIRING REQUIREMENT AND PREFERENCES:

High school graduation is considered adequate academic preparation for most bookkeeping clerk and machine operator jobs. Coursework in bookkeeping, typing, business arithmetic, office machine operation, and data entry is preferred. Applicants may be given tests to determine their ability to work quickly and accurately. Individuals should be able to work as part of a team and accept supervision.

TRAINING INFORMATION:

Additional education--either college courses or specialized courses in bookkeeping or banking--may help clerks advance. The American Institute of Banking offers such courses and has over 400 chapters in cities across the country.

JOB OUTLOOK:

Bookkeeping clerk occupations are expected to grow faster than the average for all occupations through the coming decade. Replacement needs are high plus employment opportunities are being created as a result of industry growth. In addition, clerical skills needed in bookkeeping clerk jobs are transferable to many types of financial and other institutions.

COMPETENCIES:

The following competencies are taken from the V-TECS catalog of Performance Objectives for Bookkeeping/Accounting/Payroll Clerk functions:

Recording Entries in Journals and Ledgers

- Post to ledgers using general purpose accounting machine
- Record accounting entries for cash payments
- Record accounting entries to adjust accounts
- Record accounting entries for buying merchandise on account
- Record accounting entries using pegboard
- Record accounting entries in combination journal
- Record accounting entries pertaining to notes and interest
- Record accounting entries pertaining to payroll tax
- Record accounting entries pertaining to sales tax
- Record accounting entries pertaining to accrued income and accrued expense
- Post ledger accounts from journals
- Record accounting entries pertaining to corporation income tax
- Record accounting entries for selling merchandise on account
- Record accounting entries pertaining to payroll
- Correct errors indicated by trial balance
- Post cost ledger from cash disbursements and accounts payable journal
- Receipt checks and cash sales

Accomplishing Periodic Accounting/Reporting Activities

- Prepare invoices for payments due
- Take inventories

Accomplishing General Accounting Related Activities

- Prepare accounting data for computer processing
- Process accounts payable invoices
- Prepare reconciliation correction sheets for changes to computer-generated reports
- Type tabulated material
- Record discounts allowable on invoices
- Fill out purchase invoices
- Record daily sales on unit control forms
- Enter data via computer terminal
- Prepare bill of sale
- Prepare insurance forms
- Develop instruction for other employees

Accomplishing Payroll Activities

Prepare employee's form W-2
Prepare employer's quarterly federal tax returns (Form 941)
Prepare employer's annual reconciliation reports of income tax withheld (Forms W-3)
Prepare payrolls using manual system
Prepare payrolls using computer system
Prepare individual employee's earnings records
Prepare salespersons' commission statements
Prepare payroll statements
Prepare wage checks
Prepare federal tax deposits
Prepare state unemployment tax return
Operate proof machine to sort, record, and prove records of bank transactions
Operate magnetic ink character reader (MICR)

Accomplishing Activities Related to Banking

Reconcile bank statements
Make bank deposits
Replenish cash funds
Prove petty cash using register totals
Process checks
Pay bills
Handle Visa, Master Card, and American Express deposits

Accomplishing Clerical-Related Activities

Make copies using typewriter
Process outgoing mail
Process incoming mail for distribution
Set up new files
Look up data using reference books/manuals
File materials using alphabetical and numerical filing system

TRAINING CONSIDERATION: Business Machine Repairers

DOT: 633.281.018 Office Machine Service Apprentice
706.381.030 Typewriter Repairer

JOB DUTIES:

Business machine repairers maintain and repair machines that are used to process paperwork; they include typewriters, adding and calculating machines, cash registers, dictating machines, postage meters, and duplicating and copying equipment. They make regular visits to customers' offices and stores for preventive maintenance visits. When machines break down, the repairer goes to the place of business, examines the machine, determines the cause of the malfunction, and makes the repair. Occasionally, the machine may have to be taken back to the shop for service.

Business machine repairers usually specialize in one type of machine, although repairers who work for small shops must be able to work on equipment from various manufacturers.

EMPLOYER HIRING REQUIREMENTS AND PREFERENCES:

The amount of formal education required for entry jobs varies. Some employers hire applicants with a high school education, while many others require at least one year of technical training in basic electricity or electronics. Applicants for entry jobs may have to pass tests that measure mechanical aptitude, knowledge of electricity, and general intelligence. Good eyesight and hearing are also needed.

Employers look for applicants with a neat appearance and the ability to get along well with others. Repairers must be able to work without direct supervision. They must be able to set and

meet customer maintenance schedules. Some employers require that repairers be bonded, since they may be exposed to large sums of money.

TRAINING INFORMATION:

Repairers who work in small shops are expected to be familiar with the most common types of office machines. A new hire works under the supervision of an experienced repairer and is provided on-the-job training and in some cases may receive self-study courses. Manufacturers provide more structured training programs lasting from several weeks to several months. Trainees work from one to three years before becoming fully qualified repairers. Training in electricity and electronics may be gained at a vocational school or community college.

SALARY:

In 1980, trainees earned about $180 a week. Individuals with previous electronics training may receive higher beginning wages than high school graduates. Experienced repairers earn from $200 to $250 a week, while highly skilled individuals who work on several different machines may earn $300 to $350 a week.

JOB OUTLOOK:

Employment of business machine repairers is expected to grow much faster (absolute change of 31,988, percent increase 62.4) than the average for all occupations through the 1980's. Employment opportunities for qualified beginners are expected to be excellent, especially for those with training in electronics.

COMPETENCIES:

Operating A Repair Facility

- Process repair work
- Requsition supplies and parts
- Calculate repair costs
- Update parts catalog
- Update service manuals

Maintaining and Repairing Typewriters

- Adjust aligning scales
- Adjust backspace
- Adjust bichrome mechanism
- Adjust carriage return
- Adjust for proper tilt
- Adjust feed rolls
- Adjust index mechanism
- Adjust keybroad selection mechanism
- Adjust line space mechanism
- Adjust mainspring
- Adjust margin release
- Adjust motor belts and pulleys
- Adjust print impression mechanism
- Adjust ribbon feed mechanism
- Adjust rocker assembly
- Adjust rotation spring tension
- Adjust shift mechanism
- Adjust space bar mechanism
- Adjust tabulator
- Align margin bails
- Clean typewriter
- Inspect typewriter for periodic maintenance
- Lubricate typewriter
- Perfrom fine adjustments
- Perform motion adjustments
- Replace bichrome mechanism
- Replace feed rolls
- Replace line lock parts
- Replace margin bails
- Replace motor
- Replace motor condenser
- Replace motor switch
- Replace shift mechanism

Maintaining and Repairing Photocopy Machine

- Adjust motor drive assembly
- Adjust paper feed
- Adjust print control
- Clean photocopy machine
- Repair drum
- Repair copy mechanism

Perform operational checks
Replace motor
Repair sorter
Repair copy counter

Repairing Electronic Components

Read a schematic draining
Identify circuit symbols
Editify resistors by values using
Color codes
Identify resistors by types and power ratings
Identify capacitors by values and voltage
identify inductors by families
Identify semiconductors by families
Identify integrated circuits by families
Identify terminals and connectors by size and type
Identify fasterners by types and sizes
Troubleshout and repair direct current malfunctions
Troubleshoct and repair alternating current malfunctions
Measure resistance using an ohmmeter
Measure voltage using a voltmeter
Measure DC voltage using an oscilloscope
Observe AC voltage using an oscilloscope
Observe AC Wave Froms and measure frequency using an oscilloscope
Troubleshoot RC, RL, AND RCL circuits malfunctions
Couple circuits
Troublshoot and repair transistor circuit malfunctions
troubleshoot and repair power supply malfunctions

Repairing Electronic Equipment

Troubleshoot and repair malfunctioning CRT
Troubleshoot and repair malfunctioning micro processcr
Identify malfunctioning circuit board
Repair printed circuit board
Replace components on printed circuit board
Troubleshoot and repair malfunctioning printer
Troubleshoot and repair malfunctioning keyboard
Troubleshoot and repair electronic calculators
Repair diskette drives
Troubleshoot and repair dictating equipment

TRAINING CONSIDERATION: Production Painters

DOT: 741.684.026 Painter Sprayer I

JOB DUTIES:

Production painters apply the varnish, lacquer, paint, and other finishes to metal or wood products before they leave the factory. Most production painters use spray guns to apply finishes; the rest operate automatic painting machinery such as spraying machines, dipping tanks, and tumbling barrels.

Painters mix the paint at the start of the painting process. They first determine the size of the areas to be covered in order to mix the right amount of paint. Then, they follow directions to blend paint to its correct color and thickness. These steps involve simple arithmetic using decimals and fractions.

An increasing number of production lines use automatic painting machinery and robots. Production painters in these settings are called touch up painters; they check for imperfections and spray paint parts of an article that the machine misses or cannot reach. As production lines become more automatic, painters must learn to handle machinery such as electrostatic applicators and powder-type painting systems.

EMPLOYER HIRING REQUIREMENTS AND PREFERENCES:

High school graduation is generally not required for entry level positions, but the ability to read, write, and do basic arithmetic is essential. Production painters need good eyesight and a discriminating sense of color to determine color differences.

TRAINING INFORMATION:

Training time varies from a period of days to several months. Modern painting processes such as those used to apply powdered coatings demand more skill and, thus, a longer training period. Skills are usually acquired on the job.

SALARY:

In 1980, hourly wage rates ranged from $4.50 to $11.00 according to information obtained from a limited number of union contracts.

JOB OUTLOOK:

Employment of production painters is expected to increase as fast as the average for all occupations through the 1980s (absolute change is projected to be 23,654 from 1980 to 1990; percent change is projected as 21.8). Business growth will create a need for more industrial machinery and equipment. However, employment of painters is not expected to keep pace with the greater manufacturing output because increased use of automatic painting processes and robots will raise output per worker. Nevertheless, there will still be a need for extensive touch up work which cannot be automated.

Most production painters work in plants that produce durable goods; thus, employment is often sensitive to economic conditions.

TRAINING CONSIDERATION: Emergency Medical Technician

DOT: 079.374.010

JOB DUTIES:

Emergency Medical Technicians (EMTs) drive an ambulance to the scene of an emergency. They determine the nature and extent of the victims' illnesses or injuries, establish priorities for emergency medical care, and provide the proper care, including opening an airway, restoring breathing, controlling bleeding, treating for shock, immobilizing fractures, bandaging, assisting in childbirth, and giving initial care to poison and burn victims. They also remove trapped victims from vehicles. When patients are transported to a hospital, EMTs place the patients on a stretcher and lift them into the ambulance. They report by radio to the hospital emergency department about the nature and extent of the injuries. EMTs also maintain proper equipment and supplies so that the ambulance is ready for the next trip.

EMPLOYER HIRING REQUIREMENTS AND PREFERENCES:

Few EMTs received formal training until recent years. Now instruction in emergency medical care is mandatory. Although admission requirements vary from state to state, admittance to an EMT training course generally requires that the applicant be at least 18 years old, have a high school diploma or equivalent, and have a valid driver's license. Graduates of approved EMT training programs who meet experience requirements and pass a written and practical examination administered by the National Registry of Emergency Medical Technicians earn the title of Registered EMT

Ambulance. Although not a general requirement for employment, registration is an acknowledgment of an EMT's qualifications and makes higher paying jobs easier to obtain. All 50 states have some type of certification procedure. In 13 states registration with the National Registry is required. Twenty-nine accept registration with the National Registry as the basis for reciprocity.

Employers look for individuals who are emotionally stable and have leadership ability. EMTs must be able to lift and carry up to 100 pounds. They need good eyesight (eyeglasses are permitted) and must have good dexterity and physical coordination.

TRAINING INFORMATION:

The standard training course for EMTs is the 100 hour program designed by the U.S. Department of Transportation. This program, or its equivalent is available in all 50 states and Washington, D.C. It is offered by police, fire and health departments, in hospitals, and as a special course in medical schools, colleges, and universities. After completing the basic EMT program, students may take a two-day course dealing with the removal of trapped victims and a five-day course on driving emergency vehicles. Training programs for EMT - Paramedics generally last from three to five months. In 1980, there were about 350 training programs for EMT - Paramedics. The American Medical Association's Committee on Allied Health Education and Accreditation has recently begun accrediting these programs.

In 1978, the National Registry of emerging technicians began to register EMT - Paramedics. This registration requires current

registration or state certification as an EMT - Ambulance, successful completion of an EMT - Paramedic program, six months of field experience as an EMT - Paramedic, and passing a written and practical exam.

The EMT - Intermediate registration was introduced in 1980. This level of registration is above that for basic EMTs but below that for the EMT - Paramedics.

SALARY:

Earnings depend on the type of employer, the training and experience of the individual, and the location. In 1980, graduates of approved basic training programs received starting salaries of between $7,000 and $11,000 annually. With experience, they can earn up to $13,000. Beginning EMT - Paramedics usually earn salaries of at least $10,000, and those with experience can earn up to $20,000 a year. EMTs working for police and fire departments are usually paid the same salaries as police officers and firefighters.

JOB OUTLOOK:

There were about 120,000 people who worked as paid EMTs in 1980. About 170,000 persons worked part time as volunteers on rescue squads. Employment is expected to grow as fast as the average for all occupations during the 1980's. As the population grows older, more people are expected to use ambulance services. Employment will also be spurred by the expansion of emergency medical services to such settings as nursing homes, factories, sports events, and international flights.

TRAINING CONSIDERATION: Surgical Technician

DOT: 079.374.022

JOB DUTIES:

Surgical technicians, under the supervision of registered nurses, assist surgeons and anesthesiologists before, during, and after surgery. They help set up the operating room with instruments, equipment, sterile linens, and fluids. Surgical technicians also may prepare patients for surgery.

EMPLOYER HIRING REQUIREMENTS AND PREFERENCES:

Some surgical technicians are trained on the job, in programs that vary from six weeks to one year, depending on the trainee's qualifications and the objectives of the training. On-the-job training programs in many hospitals include classroom, as well as clinical instruction. Applicants need a high school education or the equivalent. Some hospitals prefer applicants who have worked as nursing aides or practical nurses.

TRAINING INFORMATION:

Nearly all technicians not trained on the job receive their training in vocational and technical schools, hospitals, or community and junior colleges. Most programs last from nine months to one year. However, some community college programs last two years and lead to an associate degree. High school graduation normally is required for entrance to surgical technician training programs. Students receive classroom training, as well as supervised clinical experience. In 1980, there were 87 programs listed as accredited by the Committee on Allied Health Education

and Accreditation. Required courses include anatomy, physiology, and microbiology. Manual dexterity is a necessity for surgical technicians beca se they must handle various instruments quickly. They must be conscientious, orderly, and emotionally stable. In surgery, there is very little margin for error.

JOB OUTLOOK:

Employment in this field is expected to grow faster (39.4 percent) than the average for all occupations through the 1980's. Contributing to the growth in demand for workers in this small occupation is the practice of assigning surgical technicians a greater number of routine operating room tasks. In addition to job openings resulting from increased demand for technicians, many openings will occur because of the need to replace workers who transfer to other kinds of work, retire, or die.

Graduates of formal training programs or surgical technicians with certification will have the best opportunities for the job openings that will occur. Persons without these qualifications can expect to face competition for jobs of their choice.

SALARY:

The average starting salary for surgical technicians was about $11,200 a year in 1981. Experienced technicians earned about $14,200 annually. Depending on experience and education, surgical technicians employed by the Federal Government are classified as Operating Room Nursing Assistants and in 1981 they earned beginning annual salaries ranging from $8,951 to $16,826.

Graduates of formal training programs often earn higher salaries than workers without this training. Salaries also vary according to the cost of living and geographic locations.

COMPETENCIES:

Count and store operating room equipment and supplies
Administer cardiopulmonary resuscitation
Inspect emergency equipment and supplies for operation and quantity
Assist in draping patient
Assist surgeon in gowning and gloving
Prep operative site
Position and restrain patients for surgery
Put on and remove sterile gown and gloves
Drape tables and solution stands
Select equipment and supplies according to surgical procedure
Ground patient and connect electrocautery unit
Transfer patients to and from bed or stretcher and operating room table
Prepare or update case and procedure cards for surgery
Measure and pour solutions for surgery
Transport patient by stretcher, letter, and gurney
Take blood pressure
Measure and record temperature
Measure and record pulse and respirator
Complete surgical scrub
Assist in removing a cast
Aspirate incision using suction
Assist anesthetist during induction
Obtain blood from operating room blood bank
Correct contaminated drapes during operative procedure
Do complete surgical count
Identify breaks in aseptic technique
Pass instruments to surgeon
Position operating table during surgery
Measure and empty contents of suction containers
Hook patient to an electrocardiograph monitor
Assist in applying sterile dressing and bandage
Connect urinary catheters
Decontaminate operating room and equipment
Decontaminate surgical instruments
Prepare tissue specimens for laboratory analysis
Sterilize instruments and supplies
Test sterilizer

TRAINING CONSIDERATION: X-ray Technician

DOT: 078.362.026

JOB DUTIES:

Individuals who operate radiologic equipment and take X-ray pictures (also known as radiographs) are called radiologic technologists or radiographers. They usually work under the supervision of radiologists - physicians who specialize in the use of radiographs. Some states also employ X-ray technicians, who may assist or act in place of the technologists. The technicians perform the simpler functions such as taking routine chest, arm, and leg X-rays.

Radiologic technologists may work in any of three specialties within the field of radiologic technology. The most widely known specialty is X-ray technology or radiography, taking radiographs of parts of the human body for study by a radiologist in diagnosing a patient's problem. The other two are radiation therapy technology, the use of radiation-producing machines to give therapeutic treatments recommended by radiologists; and nuclear medicine technology, the application of radioactive material to help radiologists diagnose or treat illnesses or injuries.

Before a radiologic technologist can perform any work on a patient, a physician must issue a requisition ordering the work done. Radiologic technologists and technicians prepare patients for radiologic examinations, ensuring that they remove any articles of clothing, such as belt buckles or jewelry, through which X-rays cannot pass. They then position the patients, who

either lie on a table or stand, so that the correct parts of the body can be radiographed, always taking care not to aggravate injuries or make the patients uncomfortable. To prevent unnecessary radiation exposure to unaffected parts, the technologist either surrounds the exposed area with radiation protection devices, such as lead shields, or in some way limits the size of the X-ray beam.

After the necessary preparations, the technologist or technician positions the radiation equipment at the correct angle and height over the appropriate area of a patient's body. Using instruments similar to a measuring tape, the technologist measures the thickness of the section to be radiographed. He or she sets the proper controls on the machine, such as those regulating exposure time, to produce radiographs of the right density, detail, and contrast. The technologist then places a properly identified X-ray film of the correct size under the part of the patient's body to be examined and makes the exposure. Afterward, the technologist removes the film and develops it for interpretation by a radiologist. Throughout the procedure, the technologist is careful to use only the amount of radiation necessary to obtain a good diagnostic examination.

In addition to the duties involved in operating radiologic equipment, radiologic technologists may have certain administrative tasks. Technologists prepare and maintain patients' records - keeping track of the developed film, the date it was taken, and the radiologist's diagnosis. They also may maintain files,

schedule appointments, prepare work schedules, and, in general, manage radiology departments or facilities.

Radiologic technologists generally work a 40-hour week that may include evening or weekend hours. Technologists are on their feet a lot and may be required to lift or turn disabled patients.

EMPLOYER HIRING REQUIREMENTS AND PREFERENCES:

The general requirement for entry into this field is the completion of a formal education program in radiography.

Registration with the American Registry of Radiologic Technologists is an asset in obtaining highly specialized positions. Registration requirements include graduation from an accredited program of radiography and the satisfactory completion of a written examination. After registration, the title "Registered Technologists (ARRT)" may be used. Once registered in radiography, technologists may be certified in radiation therapy technology or nuclear medicine technology by completing an additional year of combined classroom study and clinical education in either of those disciplines.

Good health, emotional stability, and a sincere desire to work with the sick and disabled are important qualifications for this profession.

TRAINING INFORMATION:

In 1981, the Committee on Allied Health Education and Accreditation (CAHEA) of the American Medical Association accredited 770 programs in radiography, 148 programs in nuclear medicine technology, and 89 programs in radiation therapy

technology. These programs, which are usually two years in length but which may be part of a four-year degree curriculum, are offered by hospital, medical schools, colleges and universities. Some award a certificate; others lead to associate or bachelor's degrees. Education also may be obtained in the military services or through courses in radiologic technology offered by vocational or technical schools. While employers generally pay graduates of bachelor's degree programs the same starting salaries as those of two- and three-year programs, there is more potential for advancement for those holding the bachelor's degree. Those persons planning to be educators or administrators should pursue the bachelor's or master's degree.

All programs accept only high school graduates or the equivalent. Courses in mathematics, physics, chemistry, and biology are helpful.

Radiologic technology programs include courses in anatomy, physiology, patient care procedures, physics, radiation protection, principles of imaging, medical terminology, positioning, medical ethics, radiobiology, and pathology.

One Job Corps center currently contracts X-ray technician training to a vocational school. The program includes 800 hours of instruction and lasts for 10 months. Entering corpsmembers must have a high school diploma or GED, a tenth grade reading level and ninth grade math level. Upon completion, students must pass the state board exam. If they pass, they receive a limited license as an X-ray technician. Requirements will vary from state to state.

SALARY:

According to national survey conducted by the University of Texas Medical Branch, starting salaries of radiologic technologists employed in hospitals, medical schools, and medical centers averaged about $13,600 a year in 1981, Experienced radiologic technologists earned about $17,400 a year.

Workers with more specialized skills generally earn more. In 1981, radiation therapy technologists started at about $15,300 and experienced personnel averaged $18,900 a year. Nuclear medicine technologists had average earnings of about $15,700 to start and $19,400 after several years of experience.

The Federal Government paid new graduates of CAHEA-accredited programs of radiologic technology a starting salary of about $11,000 a year in 1981. Diagnostic radiologic technologists were paid average salaries of $14,900 a year; therapeutic radiologic technologists received $15,700 and nuclear medicine technicians, $16,200.

Job Corpsmembers who were trained in 1982 started at an average wage of $5.48 an hour.

JOB OUTLOOK:

As radiologic equipment is increasingly used to diagnose and treat disease, employment in the field of radiologic technology is expected to expand faster than the average for all occupations through the 1980's. While job prospects for radiographers are good, overall, there reportedly is a glut in the Northeast and a shortage in the South and the Northwest. Jobseekers should take

account of these regional differences, which may persist in coming years. However, in addition to jobs created by increased demand for these workers, many openings will occur because of replacement needs. Opportunities for part-time work will be best in physicians' offices and clinics where full-time radiologic services may not be required.

TRAINING CONSIDERATION: Computer Operator

DOT: 213.362.010 Computer Console Operator
213.382.010 Computer/Peripheral Equipment Operator

JOB DUTIES:

The computer operator is the person in charge of a data center. Operators respond to any situation demanded by the computer. They monitor the systems, locate types of files, make program corrections, update, print and deliver programs on time, maintain tape and disk libraries, are familiar with various hardware configurations, mount and dismount tapes and disks, and power up and down central processing units.

A computer peripheral equipment operator operates on-line or off-line peripheral machines such as magnetic tape drives, disk drives, card readers, card punches, and line or page printers. This person is responsible for transferring data from one form to another, printing output or reading data into and out of the computer.

EMPLOYER HIRING REQUIREMENTS AND PREFERENCES:

Employers in private industry require a high school education, and may prefer to hire console operators who have some community or junior college training, especially in data processing. The Federal Government requires a high school diploma, unless applicants have had specialized training or experience. Many employers test applicants to determine their aptitude for computer work, particularly their ability to reason logically.

In some firms current employees such as tabulating and bookkeeping machine operators may be reassigned to jobs as

peripheral equipment or console operators. Most often, however, employers recruit workers who already have the necessary skills to operate the equipment.

TRAINING INFORMATION:

Computer console operators require one to two years of training and peripheral equipment operators train for several months. Many high schools, public and private vocational schools, private computer schools, business schools, and community or junior colleges offer training in computer operating skills. The military services also offer valuable training in a number of computer skills.

SALARY:

In 1979, weekly earnings of beginning console operators averaged about $205. Experienced workers earned from $240 to $300.

JOB OUTLOOK:

Employment of console and peripheral equipment operators is expected to rise much faster than the average for all occupations through the 1980's. Employment of computer operators is expected to increase over 70 percent between 1980 and 1990, and experience an absolute change in employment of 140,132, in that time period.

COMPETENCIES:

Supervise Computer Center

- Determine status of processed and pending jobs
- Assess output quality
- Schedule preventive maintenance for data processing equipment
- Enforce computer center security program (control of data)
- Enforce computer center security program (control of access)
- Set up queue structure

Process Data Using Computer Equipment

- Perform power-on procedures
- Perform power-off procedures
- Mount carriage control tape
- Mount disk pack
- Mount tapes
- Input data using card reader
- Duplicate cards using a card punch
- Load programs, files or data base
- Input commands via operator's console
- Monitor data processing via operator's console
- Process jobs using work flow language
- Modify queue structure
- Perform halt/restart procedures
- Run tests on programs
- Copy files
- Clean card readers, printers and tape drives
- Load the operating system

Performing Data Processing Using Peripheral Equipment

- Input data using optical character recognition (OCR) devise
- Separate printouts using burster
- Clear paper jam
- Load paper in printer
- Change ribbon in printer

Processing Incoming Jobs and Final Output

- Submit jobs for computer processing
- Bind and distribute output

Maintaining Tape and Disk Pack Library

- Process tape request
- Initialize tapes
- Scratch tapes
- Clean tapes
- Initialize disk pack
- Prepare external tape and disk pack labels
- File disk packs and tapes

Restore lost data onto disk packs and tapes
Keep records on use of tapes

Performing Miscellaneous Computer Operator Activities

Perform life and data protection procedures during emergency conditions (fire, flood)
Perform data protection procedures during power failure
Perform power conservation and data protection procedures during air conditioning failure

TRAINING CONSIDERATION: Data Processing Machine Mechanics (Computer Service Technicians)

DOT: 828.281.010 Electronics Mechanic
828.281.014 Electronics Mechanic Apprentice

JOB DUTIES:

Computer service technicians (often called field engineers or customer engineers) service data processing machines or systems to keep them operating efficiently. They routinely adjust, oil and clean mechanical and electromechanical parts. They also check electronic equipment for loose connections and defective components or circuits. When the technicians help to install new equipment, they lay bales, make electrical connections among machines, thoroughly test the new equipment, and correct any problems before the customer uses the machine.

The technician must be able to find the cause of equipment failure and make necessary repairs when the machines break down. In addition, computer technicians must be able to read and understand technical and repair manuals for each piece of equipment. They also must be able to understand revised maintenance procedures issued by computer manufacturers.

EMPLOYER HIRING REQUIREMENTS AND PREFERENCES:

Most employers require applicants for technician trainee jobs to have one to two years of post-high school training in basic electronics or electrical engineering. In some companies, applicants must pass a physical examination. A security clearance may be required in cases where technicians regularly service

machines located in restricted buildings, such as Federal Government installations engaged in classified activities.

Most computer equipment operates on the same basic principles, but machines built by different companies may be unique in design and construction. For this reason, technicians may find it difficult to transfer between companies that maintain different brands of equipment. However, because of the pressing need for experienced technicians, many opportunities exist for well-qualified workers to transfer to other firms that handle the same type of computer hardware.

Training and experience in computer maintenance may also help qualify a technician for a job in equipment sales, programming, or management. Employers look for individuals with logical analytical minds who possess the necessary basic technical knowledge.

TRAINING INFORMATION:

Applicants for computer service technician trainee jobs must have completed a one to two year basic electronics or electrical engineering program before seeking employment. This training may be from a public or private vocational school, a college, a junior college or the Armed Forces.

Once hired, trainees are usually required to attend company training centers for three to six months. Classroom work is accompanied by practical training. Furthermore, in addition to formal instruction, trainees must complete six months to two years of on-the-job training.

SALARY:

In 1980, computer service technician trainees earned about $270 a week. Fully trained workers earned about $385 a week and senior level technicians with several years' experience earned between $430 and $575 a week.

JOB OUTLOOK:

Employment of computer technicians is expected to grow much faster than the average for all occupations through the 1980's. Absolute change in numbers is expected to be 77,296 and percent growth to be 93.4.

The very strong demand for computer technicians is related to the growing number of computers in operation. Continued reductions in the size and cost of computer hardware will bring the computer within reach of a rapidly increasing number of small organizations. As more and more of these small systems are installed, more technicians will be needed to install and to maintain them.

Employment of computer service technicians is less likely to be affected by downturns in business activity than other fields. Because computer operations are rarely curtailed during economic slumps, employment of computer service technicians should remain relatively stable.

The following list of competencies has been developed by companies that manufacture computers. This list is a condensation of the list published by the Computer and Business Equipment Manufacturers Association.

1. Personal Skills

Students will demonstrate the ability to:

- o Repair a piece of equipment or an assembly requiring them to work in a physically awkward or difficult position according to the same standards they would achieve in an ideal location.
- o Repair cheerfully and successfully a piece of inoperative equipment when the customer is very disturbed or angry.
- o Complete a series of tasks requiring them to work alone for eight hours, just as they would under someone's direction.
- o Accurately follow each and every step in a long adjustment procedure.

2. Interpersonal Relations and Communications

Students will demonstrate the ability to:

- o Use clear, concise and technically accurate language to explain to a co-worker how to make a particular mechanical, electrical or pneumatic adjustment so that the co-worker can make the adjustment correctly.
- o Answer a salesperson's question about equipment operation accurately and clearly, in a positive manner.
- o Present effectively to a supervisor their positions in conflicts with customers, co-workers or salespersons.
- o Prepare clearly, concisely and accurately a job application and a resume.

3. Mathematics

Basic Mathematics

Students will demonstrate the ability to add and subtract accurately, multiply and divide accurately, and calculate powers of ten.

Units of Measure

Students will demonstrate the ability to:

- o Measure with a common rule (English or metric) to the tolerance of the scale being used.
- o Convert, making no errors, fractions to decimals and decimals to fractions.

Computers

Students will demonstrate the ability to:

- o Add and subtract correctly in binary, octal and hexadecimal.
- o Convert numbers from one base to another without error.

4. Basic Mechanics

Students will demonstrate the ability to:

- o Understand how levers, gears, chains, sprockets, belts and pulleys are used to increase or decrease the mechanical advantage and speed of motion.
- o Adjust solenoids for proper operation.
- o Adjust micro switches for proper overtravel and release.
- o Adjust tension properly on belt and chain drives, with and without idlers.

- o List the proper lubrication of parts under conditions of light pressure, heavy pressure, high temperatures and low temperatures.
- o Identify defective parts and describe the cause and result of their condition.

Fastening Devices

- o Identify and provide examples of the use of various types of screws.
- o Identify and provide examples of the use of various pins.
- o Remove various types of pins and keys so that they can be used again.
- o Remove and install various types of rings.
- o Remove and install types of nuts and give reasons for their use.
- o List the problems that would result from stripped and cross-threaded screws and nuts.

Soldering

Students will demonstrate the ability to:

- o Remove and replace an integrated circuit (IC) on a printed circuit board using the proper equipment.
- o Remove and replace soldered wire connections to plugs and circuit boards.
- o Make "in-line" soldered splices on wire harnesses.

Mechanical Drawings

Students will demonstrate the ability to describe the function of a mechanical device pictured in a cut-away drawing.

Safety

Students will demonstrate the ability to:

- o Use properly functioning tools and test equipment in a safe and effective manner.
- o Use the proper technique for lifting and moving heavy equipment.

5. Electronics

Basic Electronics

Students will demonstrate the ability to:

- o Solve simple electrical circuits using Ohm's Law.
- o Solve for resistances, voltages, currents and wattages in series, parallel and series-parallel electrical circuits using Ohm's Law.
- o Measure currents and voltages in AC circuits containing resistance, inductance and capacitance.
- o Define common base, common emitter and common collector transistor circuit characteristics.

Electrical Symbols and Diagrams

Students will demonstrate the ability to:

- o Match a specific point on a schematic representing an electronic circuit to its part on the electronic component.
- o Follow a signal from start to finish on schematics representing more than two different circuit boards.
- o Determine points where signal flow can be checked on circuit boards.

- o Describe the condition and purpose of active devices on a schematic with signal inputs.

Logic Circuitry

Students will demonstrate the ability to wire and verify the input and output circuitry of logic gates, using truth tables.

Block and Timing Diagrams

Students will demonstrate the ability to define the uses of electrical and mechanical block diagrams.

6. Tools and Test Equipment

Students will demonstrate the ability to select and use specific hand and power tools to complete a series of mechanical tasks. Students will demonstrate the ability to use oscilloscopes, volt-ohmmeters, digital voltmeters, and ammeters to make specified measurements.

7. Parts Handling

Students will demonstrate the ability to arrange parts for storage so that each part can be located easily and promptly by means of a filing card system.

8. Reporting and Record Keeping Administration

Students will demonstrate the ability to:

- o File (alphabetically or numerically) and retrieve rapidly an assortment of technical data.
- o Add new data to or purge out-dated or redundant information from a well-organized file or collection of technical data, remaining able to locate with minimum delay any bit of pertinent information.

Reports

- o Complete an accurate time and activity report for a hypothetical workweek.
- o Fill out an order form for parts needed next month, using a list of parts used over the last year, a list of recommended parts to carry and a list of parts on hand.
- o Fill out accurately machine service history logs, using correct technical terms.

Map Reading

- o Find a given location on a map of a city.
- o Indicate the best route to a given town on a state map marked with a starting point.

IV. Occupations Which Could Not Be Recommended Due To Inadequate Data

The following occupations are projected to experience an absolute growth of over 10,000 and a percentage growth of over 18.5 between 1980 and 1990. However, reliable information on employer hiring requirements, methods of training, length of training, and types of skills required to perform competently could not be obtained. Centers may wish to gain more information about these occupations if local and state occupational data project above average growth.

1. Credit Clerk D.O.T. 205.367.022
   Statement Clerk D.O.T. 219.362.058

(Both jobs are performed in banks and other financial institutions, yet the D.O.T. codes were not included in the projections for bank clerks.)

Credit clerks process applications for individuals applying for loans and credit. The clerk may interview applicants to obtain personal and financial data, call or write to credit bureaus, employers and personal references to check credit, and verify credit limit. The clerk may keep records of credit transactions, deposits and payments, and may compute interest and payments.

Statement clerks record previously prepared bank statements, distribute them to customers and reconcile discrepancies in records and accounts. The clerks route statements for mailing to customers. They may cancel checks and post stop payment notices to prevent payment of protested checks.

2. Claims Clerk I and II:

D.O.T. 241.362.010 and
D.O.T. 205.367.018

The claims clerk I reviews insurance claim forms for completeness, adds missing data, and transmits claims for payment or further investigation. The clerk reviews customer insurance policies to determine coverage and calculates the amount of claims, using a calculator. The claims clerk II prepares reports and insurance claim forms for damage or loss against insurance companies, obtains information from the insured to prepare the form, and forwards the report of claim to the insurance company.

3. Insurance Clerks, Medical

D.O.T. 214.362.022

Medical insurance clerks verify hospitalization insurance coverage, compute patient benefits, and compile itemized hospital bills. They contact insurance companies to verify a patient's coverage and to obtain information concerning extent of benefits. They compute the hospital bill showing amounts to be paid by the insurance company and the patient.

4. Dispatchers, Vehicle Service or Work

10 D.O.T. codes

Dispatchers receive telephone and written orders from various sources and relay the requests. They keep records of the requests and services rendered. Dispatchers may work in plants, where they relay orders for maintenance service; in utilities companies, where they dispatch customer service workers to install, service, and repair electric, gas, or steam power systems;

in bus depots, where they dispatch interstate or long distance buses according to schedules; and in various other industries performing the same functions.

5. Lead Operator, Automatic Vulcanizing, Rubber and Plastics

D.O.T. 690.362.010

The individual operates a machine that automatically vulcanizes lengths of rubber hose. The operator moves the controls of the machine to specified settings to regulate temperature, pressure, feed rate and vulcanizing time, and records the hose footage processed and the vulcanizing time in a production log.

TABLE III-A
OES AND RELATED D.O.T. OCCUPATIONAL TITLES RANKED IN ORDER OF ABSOLUTE CHANGE IN WHICH JOB CORPS IS CURRENTLY NOT TRAINING OR IN WHICH JOB CORPS IS PROVIDING TRAINING TO FEWER THAN 25 INDIVIDUALS

OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED[1]	JOB CORPS TRAINING FEASIBILITY CODE[2]
	Increase 100,000 or more						
62002201	Truck Drivers		356,222	23.1			6
	Road-Oiling-Truck Driver	853.663.018			1-3	5	
	Concrete-Mixing-Truck Driver	900.683.010			1-3	3	
	Dump-Truck Driver	902.683.010			1-3	2	
	Explosives-Truck Driver	903.683.010			4-6	3	
	Powder-Truck Driver	903.683.014			4-6	3	
	Tank-Truck Driver	903.683.018			4-6	3	
	Tractor-Trailer-Truck Driver	904.383.010			7-8	4	
	Log-Truck Driver	904.683.010			4-6	4	
	Milk Driver	905.483.010			4-6	3	
	Garbage Collector Driver	905.663.010			1-3	3	
	Truck Driver, Heavy	905.663.014			4-6	4	
	Van Driver	905.663.018			7-8	4	
	Water-Truck Driver 2	905.683.010			4-6	3	
	Food-Service Driver	906.683.010			1-3	3	
	Liquid-Fertilizer Servicer	906.683.014			1-3	3	
	Truck Driver, Light	906.683.022			4-6	3	
	Hostler	909.663.010			4-6	4	
	Driver-Utility Worker	919.663.018			1-3	4	
	Escort-Vehicle Driver	919.663.022			4-6	2	
	Tow-Truck Operator	919.663.026			4-6	3	
	Observer Helper, Gravity Prospecting	939.663.010			1-3	3	
10203222	Preschool/Elementary Teacher		349,014	20.0			4
	Teacher, Elementary School	092.227.010			Coll.	6	
	Teacher, Kindergarten	092.227.014			9-12	7	
	Teacher, Preschool	092.227.018			7-8	6	

1 The key to the code for length of training required appears at the end of this table.
2 The key to the feasibility code appears at the end of this table.

OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
40040601	Computer Operator	213.362.010	132,140	71.7	7-8	6	1
80002003	Stock Clerk, Sales Floor Self Service Store	299.367.014	121,674	20.5	4-6	4	2
10160200	Computer Programmer		111,856	49.5			4
	Detail Programmer	219.367.026			9-12	5	
	Business Programmer	020.162.014			9-12	7	
	Chief Business Programmer	020.167.018			Coll.	7	
	Eng. and Scientific Programmer	020.167.022			Coll.	8	
	Information System Programmer	020.187.010			Coll.	7	
	Process Control Programmer	020.187.014			Coll.	7	
	Increase 50,000 to 99,999						
62000801	Delivery and Route Workers		86,089	10.8			2
	Driver, Sales Route	292.353.010			7-8	3	
	Newspaper/Delivery Driver	292.363.010			4-6	4	
	Lunch Truck Driver	292.463.010			4-6	2	
	Coin Collector	292.483.010			7-8	3	
	Deliverer, Merchandise	299.477.010			4-6	3	
	Telephone Director Distributor/ Driver	906.683.018			4-6	3	
50081400	Data Processing Machine Mechanics		77,296	93.4			1
	Assembly Technician	633.261.010			7-8		
	Field Engineer	828.261.014			9-12		
	Electronics Mechanic	828.281.010			9-12		
	Electronics Mechanic Apprentice	828.281.014			9-12		
70101006	Police Patrolmen/Women		65,951	16.8			6
	Pilot, Highway Patrol	375.163.014			9-12	6	
	Accident Prevention Police Officer	375.263.010			7-8	5	
	Police Officer 1	375.263.014			7-8	6	

1/ The key to the code for length of training required appears at the end of this table.
2/ The key to the feasibility code appears at the end of this table.

OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
	State Highway Policy Officer	375.263.014			7-8	4	
	Border Guard	375.363.010			7-8	5	
61087600	Miscellaneous Machine Operators, Rubber and Plastic		65,369	30.5			7
	Lead Operator, Automatic Vulcanizing	690.362.010			4-6	5	
40065001	*Shipping and Receiving Clerks		58,578	15.1			
	Reconsignment Clerk	209.367.042			7-8	4	
	Shipping/Order Clerk	219.367.030			7-8	4	
	Cargo Checker	222.367.010			4-6	4	
	Truckload Checker	222.367.066			7-8	3	
	Aircraft/Shipping Checker	222.287.010			4-6	5	
	Car Checker	222.387.014			7-8	2	
	Fuel/Oil Clerk	222.387.018			4-6	7	
	Shipping and Receiving Clerk	222.387.050			4-6	5	
	Grain Elevator Clerk	222.567.010			4-6	4	
	Ship Runner	222.567.014			4-6	4	
	Route/Delivery Clerk	222.567.034			4-6	3	
	Router	222.587.038			4-6	2	
	Vault Worker	222.587.058			4-6	3	
	Receiving Checker	222.687.018			7-8	3	
	Shipping Checker	222.687.030			4-6	4	
	Stubber	222.687.034			4-6	2	
	Incoming/Freight Clerk	248.362.010			7-8	5	
	Booking Clerk	248.367.014			4-6	5	
	Checker	919.687.010			1-3	2	
30001403	Sales Agents, Real Estate		56,080	51.6			5
	Leasing Agent, Residence	250.357.014			9-12	5	
	Sales Agent	250.357.018			9-12	5	

*Job Corps currently provides training in similar occupations which are listed under other OES headings; i.e., Materials Handler 929.687.030, Laborer, Stores 922.687.058, and Stock Clerk, 222.387.058.

OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
40065002	Shipping Packers		51,671	15.0			7
	Aircraft Equipment	222.587.010			7-8	4	
	Distributing Clerk	222.587.018			7-8	3	
	Cloth Bolt Bander	920.587.010			1-3	2	
	Line Out Worker 1	920.687.110			4-6	2	
	Line Out Worker 2	920.687.114			1-3	2	
	Shipping Processor	920.687.162			4-6	2	
	Packer	929.684.010			4-6	3	
	Roll Coverer, Burlap	929.687.042			1-3	2	
50081807	Maintenance Mechanic		55,148	16.4			3,4
	Automotive-Maintenance-Equipment Service	620.281.018			7-8	7	
	Forge-Shop-Machine Repairer	626.261.010			7-8	7	
	Machine Repairer, Maintenance	626.281.010			7-8	7	
	Case-Finishing-Machine Adjuster	626.381.010			7-8	5	
	Gas-Welding-Equipment Mechanic	626.381.014			7-8	7	
	Hydraulic-Press Servicer	626.381.018			7-8	6	
	Repairer, Welding Equipment	626.381.022			7-8	6	
	Composing-Room Machinist	627.261.010			7-8	8	
	Machinist Apprentice, Composing Room	627.261.014			7-8	8	
	Machinist Apprentice, Linotype	627.261.018			7-8	7	
	Machinist, Linotype	627.261.022			7-8	7	
	Press Maintainer	627.281.010			7-8	8	
	Wire Repairer	628.684.038			7-8	3	
	Miller, Head, Wet Process	629.261.014			7-8	7	
	Powder-Line Repairer	629.261.018			7-8	6	
	Maintenance Mechanic	629.280.010			7-8	6	
	Bakery-Machine Mechanic	629.281.010			7-8	7	
	Cellophane-Casting-Machine Repairer	629.281.014			7-8	6	

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OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
50081807 (cont.)	Dairy-Equipment Repairer	629.281.018			7-8	7	
	Forming-Machine Adjuster	629.281.026			7-8	5	
	Maintenance Mechanic	629.281.030			7-8	6	
	Pump Mechanic	629.281.034			7-8	6	
	Machine-Clothing Replacer	629.361.010			7-8	7	
	Foiling-Machine Adjuster	629.381.010			7-8	5	
	Maintenance Mechanic, Compressed-Gas Pl.	630.261.010			7-8	7	
	Oven-Equipment Repairer	630.261.014			7-8	6	
	Repairer 1	630.261.018			7-8	7	
	Pump Servicer	630.281.018			7-8	7	
	Repairer	630.281.026			7-8	7	
	Rubberizing Mechanic	630.281.030			7-8	7	
	Conveyor-Maintenance Mechanic	630.381.010			7-8	6	
	Lead Operator	630.381.018			7-8	6	
	Fixture Repairer-Fabricator	630.384.010			4-6	5	
	Screen-and-Cyclone Repairer	630.664.014			4-6	4	
	Repairer 2	630.684.026			4-6	4	
	Salvager	709.684.070			4-6	5	
61060802	Production Packagers (Contains 80 D.O.T. codes)		51,692	8.5	4-6	3	2
	Increase 25,000 to 49,999						
70100607	Correction Officers		44,255	16.1			3,6
	Jailer	372.367.014			4-6	4	
	Correction Officer	372.667.018			4-6	4	
	Patrol Conductor	372.667.010			4-6	3	
	Police Officer	375.367.010			4-6	4	
62000400	Bus Drivers		41,742	15.0			3,6
	Bus Driver, Day Haul	913.363.010			4-6	3	
	Bus Driver	913.463.010			4-6	5	

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OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
62000400 (cont.)	Mobile Lounge Driver	913.663.014			4-6	3	
10240804	Buyers, Retail/Wholesale		41,661	18.8			4
	Buyer	162.157.018			9-12	6	
	Buyer, Assistant	162.157.022			7-8	6	
30001005	Sales Agent, Insurance	250.257.010	39,677	16.5	9-12	6	4,5
70041601	Host/Hostess-Restaurant, Lounge Coffeeshop	310.137.010	38,212	33.3	9-12	6	5
70100401	Fire Fighters		36,614	16.7			3
	Fire Chief's Aide	373.363.010			7-8	6	
	Firefighter	373.364.010			7-8	6	
	Firefighter, Fire and Rescue	373.663.010			7-8	5	
	Smoke Jumper	452.364.014			4-6	6	
	Forest-Fire Fighter	452.687.014			1-3	2	
40061604	Order Clerks		36,234	14.9			7
	Industrial Order Clerk	221.367.022			9-12	4	
	Repair Order Clerk	221.382.022			7-8	3	
	Checker, Bakery Products	222.487.010			7-8	4	
	Sample Display Preparer	222.687.026			4-6	3	
	Credit Clerk, Blood Bank	245.367.022			7-8	3	
	Order Control Clerk, Blood Bank	245.367.026			7-8	3	
	Order Clerk	249.367.054			7-8	4	
40040201	Bookkeeping, Billing Machine Operator		35,128	19.9			1
	Machine Operator 1	210.382.022			7-8	5	
	Machine Operator 2	210.382.026			7-8	5	
	Fee Clerk	214.362.018			7-8	3	
	Billing Machine Operator	214.482.010			7-8	4	

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OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
40040201 (cont.)	Deposit Refund Clerk	214.482.014			7-8	4	
	Audit Machine Operator	216.482.018			4-6	4	
61021609	Punch Press Operator		34,276	18.8			3
	Duplicator-Punch Operator	615.482.014			7-8	5	
	Ironworker-Machine Operator	615.482.018			4-6	4	
	Punch Press Operator 1	615.482.022			1-3	5	
	Punch Press Operator, Automatic	615.482.038			4-6	5	
	Turret-Punch Press Operator	615.482.038			7-8	5	
	Punch Press Operator 3	615.682.014			4-6	4	
	Clearance Cutter	615.685.014			1-3	2	
	Cut-Off-Machine Operator	615.685.022			1-3	2	
	Punch Press Operator 2	615.685.030			1-3	3	
	Strip-Metal-Punch-and-Straightener Operator	615.685.038			1-3	3	
	Turret-Punch Press Operator, Tape-Contr.	615.685.042			4-6	3	
	Tubing-Machine Tender	715.685.070			1-3	3	
10120801	X-Ray Technician	078.362.026	33,909	37.2	10-12	6	1
40062400	Production Clerks		33,873	16.9			7
	Extension Clerk	219.362.030			7-8	5	
	Production Scheduler, Paperboard Products	221.162.010			9-12	6	
	Material Coordinator	221.167.014			9-12	6	
	Production Coordinator	221.167.018			9-12	6	
	Retort-Load Expediter	221.167.022			7-8	5	
	Progress Clerk	221.362.022			7-8	5	
	Alterations Workroom Clerk	221.367.010			4-6	3	
	Line-Up Worker	221.367.026			7-8	3	
	Locomotive Lubricating Systems Clerk	221.367.030			7-8	5	
	Machine-Stoppage-Frequency Checker	221.367.034			4-6	3	

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OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
40062400 (cont.)	Maintenance Data Analyst	221.367.038			7-8	5	
	Material Expediter	221.367.042			7-8	4	
	Mill Recorder, Computerized Mill	221.367.046			7-8	5	
	Recorder	221.367.050			7-8	5	
	Relay-Record Clerk	221.367.054			7-8	5	
	Reproduction Order Processor	221.367.058			7-8	5	
	Scheduler, Maintenance	221.367.066			7-8	4	
	Service-Liaison Representative	221.367.074			9-12	6	
	Traffic Clerk	221.367.078			7-8	4	
	Work-Order-Sorting Clerk	221.367.082			7-8	5	
	Production Clerk	221.382.018			7-8	4	
	Back-Shoe Worker	221.387.010			7-8	4	
	Control Clerk	221.387.018			7-8	6	
	Expediter Clerk	221.387.026			7-8	3	
	Jacket Repairer	221.387.030			7-8	3	
	Job Tracer	221.387.034			7-8	4	
	Order Detailer	221.387.046			7-8	4	
	Checker-In	221.587.014			4-6	2	
	Odd-Piece Checker	221.587.018			4-6	2	
	Ticket Scheduler	221.587.038			4-6	3	
	Weave-Defect-Charting Clerk	221.587.042			4-6	2	
	Yardage-Control Clerk	221.587.050			4-6	2	
	Ticket Puller	221.687.014			1-3	2	
	Metal-Control Coordinator	222.167.010			7-8	6	
	Expediter	222.367.018			7-8	4	
	Grey-Goods Marker	229.587.010			4-6	2	
	Advertising-Dispatch Clerk	247.387.014			7-8	4	
	Supercargo	248.167.010			7-8	7	
	Container Coordinator	248.367.022			7-8	6	
	Labor Expediter	249.167.018			9-12	5	
	Car Distributor	910.367.014			7-8	5	
	Flight-Information Expediter	912.367.010			9-12	5	
	Schedule Maker	913.167.018			9-12	5	

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40062400 (cont.)	Dispatcher, Radioactive-Waste-Disposal	955.167.010			9-12	7	
40064000	Payroll and Timekeeping Clerks		32,109	18.1			
	Flight Crew Time Clerk	215.362.018			9-12	5	1
	Assignment Clerk	215.367.010			4-6	3	
	Timekeeper	215.367.022				3	
	Payroll Clerk, Data Processing	215.382.010			7-8	4	
	Payroll Clerk	215.482.010			4-6	4	
50082400	Office Machine and Cash Register Servicer		31,988	62.4			1
	Mail Processing Equipment Mech.	633.261.014			7-8	6	
	Cash Register Servicer	633.281.010			7-8	7	
	Dictating - Transcribing Machine Servicer	633.281.014			7-8	7	
					7-8	7	
	Office Machine Servicer	633.281.018			7-8	7	
	Office Machine Servicer App.	633.281.018			7-8	7	
	Statistical Machine Servicer	633.281.030			4-6	4	
	Aliner, Typewriter	706.381.010			7-8	6	
	Repairer, Typewriter	706.381.030					
7083000	Welfare Service Aides		31,905	33.8			3
	Case Aide	195.367.010			Coll.	6	
	Management Aide	195.367.014			9-12	5	
	Increase 10,000 to 24,999						
40062210	Claims Clerks		24,952	38.8			3
	Claims Clerk 1	241.362.010			7-8	4	
	Claims Clerk 2	205.367.018			7-8	4	
61084210	Production Painters		23,654	21.8			1

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61084210 (cont.)	Metal-Spraying-Machine Operator, Automatic	505.382.010			4-6	7	
	Sprayer Operator	505.682.010			4-6	3	
	Metal Sprayer, Production	505.684.014			4-6	3	
	Browning Processor	505.685.010			4-6	3	
	Metal-Spraying-Machine Operator, Automatic	505.685.014			4-6	2	
	Vacuum-Metalizer Operator	505.685.018			4-6	3	
	Enameler	509.684.010			4-6	5	
	Ceramic Coater, Machine	509.685.022			1-3	2	
	Lacquer-Dipping-Machine Operator	509.685.034			1-3	2	
	Stain Applicator	561.585.010			4-6	2	
	Operator, Prefinish	562.685.018			4-6	5	
	Optical-Glass Silverer	574.484.010			1-3	4	
	Silvering Applicator	574.582.010			4-6	5	
	Silverer	574.684.014			1-3	3	
	Paint-Spray Tender	574.685.014			1-3	4	
	Foxing Painter	584.685.022			4-6	2	
	Paint-Sprayer Operator, Automatic	599.382.010			7-8	5	
	Painter, Electrostatic	599.682.010			7-8	4	
	Lacquerer	599.685.054			1-3	3	
	Paint-Line Operator	599.685.066			4-6	3	
	Painter, Tubling Barrel	599.685.070			4-6	3	
	Painting-Machine Operator	599.685.074			4-6	3	
	Spray-Machine Tender	599.685.090			4-6	4	
	Tube Coater	599.685.102			1-3	2	
	Coating-Machine Tender	692.685.054			4-6	2	
	Lacquerer	715.684.138			1-3	2	
	Dipper, Clock and Watch Hands	715.687.026			1-3	2	
	Painter, Clock and Watch Hands	715.687.098			1-3	2	
	Painter and Grader, Cork	732.687.062			1-3	2	
	Painter	735.687.018			4-6	2	
	Shellacker	737.687.130			1-3	2	
	Painter, Brush	740.684.022			1-3	2	

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OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
61084210 (cont.)	Funnel Coater, Hand Painter, Embossed or Impressed Lettering	740.687.018			1-3	2	
	Painter, Panel Edge	740.687.022			1-3	2	
	Painter, Mirror	741.684.022			4-6	4	
	Painter, Sprayer 1	741.684.026			4-6	5	
	Porcelain-Enamel Repairer	741.684.030			1-3	2	
	Spray-Painting-Machine Operator	741.685.010			1-3	2	
	Painter, Spray 2	741.687.018			1-3	2	
	Striper, Spray Gun	741.687.022			1-3	2	
	Finisher	749.684.026			1-3	4	
	Frame Trimmer 1	749.684.030			1-3	2	
	Lacquerer	749.684.034			1-3	3	
	Painter, Touch-Up	749.684.038			1-3	4	
	Dipper and Drier	749.687.010			1-3	2	
	Keg Varnisher	749.687.014			1-3	2	
	Painter, Ski Edge	749.687.022			1-3	2	
	Glass Tinter	840.684.010			4-6	5	
	Painter, Transportation Equipment	845.381.014			4-6	6	
40066846	Insurance Clerk, Medical	214.362.022	23,542	34.2	9-12	5	7
10120402	Dental Hygienists	078.361.010	23,462	39.5	9-12	6	4
61085205	Sewing Machine Operator, Reg. Equipment Nongarment		23,411	17.2			3
	Splicing-Machine Operator	689.682.018			1-3	4	
	Sewing Machine Operator	780.682.010			1-3	4	
	Slip-Cover Sewer	780.682.014			1-3	4	
	Upholstery Sewer	780.682.018			4-6	4	
	Fur-Machine Operator	783.682.010			4-6	6	
	Sewing Machine Operator	783.682.014			1-3	4	
	Glove Sewer	784.682.010			4-6	4	
	Hat-and-Cap Sewer	784.682.014			1-3	3	
	Lamp-Shade Sewer	787.381.010			4-6	6	

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OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
61085205 (cont.)	Binder	787.682.010			1-3	4	
	Drapery Operator	787.682.018			4-6	4	
	Hemmer	787.682.026			1-3	4	
	Overedge Sewer	787.682.034			4-6	4	
	Roll-or-Tape-Edge-Machine Operator	787.682.038			1-3	3	
	Sewing Machine Operator	787.682.042			4-6	4	
	Sewing Machine Operator	787.682.046			4-6	5	
	Sewing Machine Operator	787.682.050			4-6	4	
	Sewing Machine Operator	787.682.054			1-3	3	
	Sewing Machine Operator	787.682.058			4-6	4	
	Sewing Machine Operator	787.682.062			1-3	4	
	Sewing Machine Operator	787.682.066			1-3	4	
	Sewing Machine Operator	787.682.070			1-3	4	
	Sewing Machine Operator	787.682.078			4-6	4	
	Shirring-Machine Operator	787.682.082			1-3	4	
	Tucking-Machine Operator	787.682.086			1-3	4	
	Zipper Setter						
61020201	Drill Press and Boring Machine Operators		23,081	18.6	7-8	7	
	Boring-Machine Set-Up Operator, Jig	606.280.010			7-8	7	
	Boring-Mill Set-Up Operator, Horizontal	606.280.014			7-8	6	
	Drill-Press Set-Up Operator, Multiple S	606.380.010			7-8	6	
	Drill-Press Set-Up Operator, Radial	606.380.014			7-8	6	
	Drill-Press Set-Up Operator, Radial TO	606.380.018			4-6	4	
	Driller-and-Reamer, Automatic	606.382.010			7-8	5	
	Boring-Machine Operator	606.682.010			4-6	3	
	Drill-Press Operator	606.682.014			4-6	4	
	Drill-Press Set-Up Operator, Single SPI	606.682.018			7-8	4	
	Tapper Operator	606.682.022					

* Drill press operator is considered a step-off to machine tool operator in Job Corps training programs.

OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
61020201 (cont.)	Boring-Machine Operator, Production	606.685.010			4-6	3	
	Chamfering-Machine Operator 1	606.685.014			4-6	3	
	Chamfering-Machine Operator 2	606.685.018			1-3	2	
	Choke Reamer	606.685.022			1-3	3	
	Drill-Press Operator, Production	606.685.026			1-3	2	
	Drilling-Machine Operator, Automatic	606.685.030			1-3	3	
	Reaming-Machine Tender	606.685.034			1-3	3	
	Driller	700.684.026			4-6	3	
	Collet Driller	715.684.062			1-3	2	
	Driller and Broacher	715.685.022			4-6	5	
	Press Operator, Pierce and Shave	715.685.050			1-3	2	
	Reamer, Center Hole	715.687.110			1-3	2	
10243821	Travel Agents		21,843	44.7			5
	Rater, Travel Accom.	168.367.014			7-8	6	
	Travel Agent	252.157.010			7-8	4	
40040602	Peripheral EDP Equipment Operators		21,429	44.1			1
	Sorting Machine Operator	208.685.030			4-6	3	
	Computer-Peripheral Equipment Operator	213.382.010			7-8	4	
	Auxiliary Equipment Operator, Data Processing	213.685.010			1-3	3	
61082804	Washers, Machine and Starchers	361.665.010	19,486	32.9	4-6	4	2
40063200	Mail Carrier	230.367.010	18,577	7.7	7-8	4	3
	Rural Mail Carrier	230.363.010			4-6	2	
50140800	Crane, Derrick and Hoist Operators		17,475	14.0			3
	Dross Skimmer	519.683.010			1-3	4	
	Dragline Operator	850.683.018			4-6	5	

1/ The key to the code for length of training required appears at the end of this table.
2/ The key to the feasibility code appears at the end of this table.

OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
50140800 (cont.)	Rigger	869.683.014			4-6	4	
	Coal Trimmer	911.687.018			1-3	3	
	Marine Railway Operator	921.662.022			4-6	4	
	Bridge-orGantry-Crane Operator	921.663.010			4-6	5	
	Cherry-Picker Operator	921.663.014			1-3	3	
	Derrick Operator	921.663.022			1-3	4	
	Hoist Operator	921.663.026			4-6	4	
	Hoisting Engineer	921.663.030			1-3	4	
	Irradiated-Fuel Handler	921.663.034			1-3	5	
	Locomotive-Crane Operator	921.663.038			4-6	5	
	Monorail Crane Operator	921.663.042			1-3	3	
	Pneumatic-Hoist Operator	921.663.046			1-3	3	
	Scraper-Loader Operator	921.663.050			4-6	4	
	Tower-Crane Operator	921.663.054			4-6	5	
	Tractor-Crane Operator	921.663.058			1-3	4	
	Truck-Crane Operator	921.663.062			1-3	5	
	Yarding Engineer	921.663.066			4-6	6	
	Boat-Hoist Operator	921.683.010			1-3	3	
	Cantilever-Crane Operator	921.683.018			4-6	5	
	Cupola Hoist Operator	921.683.030			4-6	4	
	Derrick-Boat Operator	921.683.034			4-6	5	
	Hydraulic-Boom Operator	921.683.046			1-3	3	
	Log Loader	921.683.058			4-6	4	
	Skip Operator	921.683.062			4-6	4	
	Sorting-Grapple Operator	921.683.066			4-6	6	
	Tower-Loader Operator	921.683.074			7-8	5	
	Winch Driver	921.683.082			4-6	4	
	Yard Worker	921.683.086			1-3	4	
	Boat Loader 2	921.685.010			1-3	3	
	Electric-Fork Operator	921.685.042			1-3	2	
	Hoist Operator	932.363.010			4-6	5	
40061804	Dispatchers, Vehicle Service or Work		16,733	18.7			7

1 The key to the code for length of training required appears at the end of this table.
2 The key to the feasibility code appears at the end of this table.

OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
40061804 (cont.)	Dispatcher, Maintenance Service	239.367.014			7-8	3	
	Receiver-Dispatcher	239.367.022			7-8	4	
	Routing Clerk	240.367.070			7-8	3	
	Bus Dispatcher, Interstate	913.167.010			7-8	5	
	Taxicab Starter	913.367.010			4-6	3	
	Dispatcher, Traffic or System	919.162.010			7-8	7	
	Dispatcher, Oil Well Service	939.362.010			7-8	5	
	Dispatcher, Service or Work	952.167.010			7-8	7	
	Water Service Dispatcher	954.367.010			7-8	4	
	Dispatcher, Service	959.167.010			7-8	4	
40062602	Personnel Clerks		16,572	17.5			5
	Civil Service Clerk	205.362.010			7-8	3	
	Employment Clerk	205.362.014			9-12	5	
	Identification Clerk	205.362.022			7-8	3	
	Insurance Clerk 2	205.567.010			7-8	4	
	Personnel Clerk	209.362.026			9-12	4	
50142205	Testers (Contains 144 D.O.T. codes which are too diverse to recommend a training program.)		14,149	13.4			3
70080401	Recreation Facility Attendant	341.367.010	14,094	20.5	7-8	3	2
	Skate Shop Attendant	341.464.010			4-6	3	
	Ski Tow Operator	341.665.010			7-8	3	
	Caddie	341.677.010			4-6	2	
	Golf Range Attendant	341.683.010			4-6	2	
	Cardroom Attendant 1	343.467.010			4-6	4	
	Floor Attendant	343.467.014			1-3	2	
	Cardroom Attendant 2	343.577.010			4-6	2	
	Cabana Attendant	349.677.010			4-6	3	

1/ The key to the code for length of training required appears at the end of this table.
2/ The key to the feasibility code appears at the end of this table.

OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
50140400	Cabinetmaker	660.280.010	13,710	26.7	7-8	6	3
	Cabinetmaker Apprent.	660.280.014			7-8	6	
70120600	Housekeepers, Private		13,064	15.2			
	Housekeeper, Home	301.137.010			4-6	6	
	Butler	309.137.010			4-6	6	
	Butler, Second	309.674.010			4-6	3	
50023600	Roofers		12,391	16.0			3,4
	Roofer	866.381.010			4-6	7	
	Roofer Apprentice	866.381.014			4-6	7	
	Roofer Applicator	866.684.010			4-6	6	
10121002	Surgical Technician	079.374.022	12,340	39.4	7-8	6	1
40040202	Proof Machine Operator	217.382.010	12,304	25.9	4-6	4	1
10222201	Announcer	159.147.010	11,838	27.8	9-12	6	4
	Disc Jockey	169.147.014			Coll.	5	
50141200	Dental Lab Technicians	712.281.010	11,827	27.3	9-12	7	4
40066841	Credit Clerks, Banking and Insurance		11,245	22.4			7
	Mortgage Processing Clerk	203.382.022			7-8	5	
	Credit Clerk	205.367.022			9-12	4	
	Credit Analyst	241.267.022			9-12	7	
	Mortgage Clerk	249.382.010			7-8	5	
40066823	Statement Clerk	219.362.058	11,031	33.9	7-8	4	7

1/ The key to the code for length of training required appears at the end of this table.
2/ The jey to the feasibility code appears at the end of this table.

Code Key for Appendix III-A

Column 7: Length of Training Required

CODE	EXPLANATION
1	No instruction needed
2	Introductory instruction
3	Less than 3 months
4	3 to 6 months
5	6 months to 1 year
6	1 to 2 years
7	Over 2 years

OES	JOB TITLES (D.O.T. Titles are Indented)	D.O.T.	ABSOLUTE CHANGE IN EMPLOYMENT 1980-1990	PERCENT CHANGE IN EMPLOYMENT 1980-1990	LANGUAGE LEVEL REQUIRED (GRADE)	LENGTH OF TRAINING REQUIRED 1/	JOB CORPS TRAINING FEASIBILITY CODE 2/
40061603	Desk Clerks		10,982	13.8			3
	Hotel Clerk	238.362.010			7-8	4	
10101802	Recreational Therapists		10,938	48.5			4
	Manual Arts Therapist	076.124.010			9-12	7	
	Recreational Therapist	076.124.010			9-12	6	
	Art Therapist	076.127.010			9-12	7	
	Music Therapist	076.127.014			Coll.	7	
20061613	Auto Service Dept. Manager		10,694	22.9			5
	Service Manager	185.167.058			9-12	6	
61021007	Milling and Planing*		10,617	14.7			
	Machine Operators (Contains 33 D.O.T. codes)						
50061003	Machine Tool Setters**		10,294	18.6			4
	Setter, Automatic-Spinning Lathe	604.360.010			7-8	6	
	Trim-Machine Adjuster	609.280.010			7-8	5	
	Threading-Machine Setter	609.380.014			7-8	6	
	Spring Coiling Machine Setter	616.260.018			7-8	7	
	Machine Setter	616.360.022			7-8	6	
	Four-Slide-Machine Setter	616.380.010			7-8	6	
	Machine Try-Out Setter	600.360.010			7-8	7	
	Machine Setter	600.380.022			7-8	7	
	Job Setter, Honing	603.280.034			7-8	6	
	Buffing-Line Set-Up Worker	603.360.010			4-6	5	
	Grinder Machine Setter	603.380.010			7-8	6	
62002001	Ambulance Drivers and Attendants		10,098	32.3			3
	Ambulance Attendant	355.374.010			7-8	3	
	Ambulance Driver	913.683.010			4-6	4	

* This occupation is considered to be a part of machine tool operator training.

** This occupation is an extension of machine tool operator, in which Job Corps is already providing training.

Code Key for Appendix III-A

Column 8: Feasibility of New Training Offerings for Job Corps

CODE	EXPLANATION
1	This occupation is recommended for further consideration as a possible Job Corps training offering.
2	This job requires little or no training time.
3	The job requires specialized OJT training which can best be provided by the industry.
4	The level of training required for this occupation is beyond Job Corps mandate.
5	While a specific level of education is not required for this job in all cases, employers hire individuals with a more advanced educational or training level.
6	Age requirements preclude this occupation as a training offering in Job Corps.
7	Not enough information was available to recommend this occupation.